PROJECT TITLE : ANALYTICAL INVESTIGATIONS

PERIOD COVERED : JANUARY 29 - FEBRUARY 24, 1981

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PRODUCT IDENTIFICATION BY GC/MS

Impurities in triacetin EASTMAN FJ 5912 were identified for QC (1). Major contamination is GPD. Minor impurities are the three isomers of glycerol-monoacetate-monopropionate, glycerol-1.2-diacetate-butanoate and dimethyl phthalate (2).

ORGANIC ACIDS BY GC

Work on the development of a gas chromatographic method for the analysis of organic mono-, di- and tri-carboxylic acids in fermented tobacco extracts has continued (3). Derivatization of an aqueous acid standard containing 50 mg $.l^{-1}$ each of citric, lactic, malic, succinic, fumaric, tartaric, pyruvic and oxalic (internal standard) acid by treating the acid mixture with Ag^{+}/C_2H_5J in pentane gives the ethyl esters in ca. 60% yield (Fig. 1).

Derivatization of acids in fermented tobacco extracts has been investigated. The esters are formed in satisfactory yields. All esters are separated with good sensitivity by GC^2 on a 50m x 0.3 mm fused silica OV 1 column (Fig. 2). The optimum conditions for the determination of these acids in various fermented tobacco extracts are being established.

ROUTINE ANALYSES

- Phosphate and sulfate (22) for QC and Process Development
- Amino acids (30) for Biotechnology (Project SAVOURY).

REFERENCES

1. Memo from A. Widmer to Y. Genoud, January 19, 1981.
2. Memo from Y. Genoud to A. Widmer, February 19, 1981.
3. E. Lecoultre, PME Monthly Report, January 1981.

E. Lecoultre

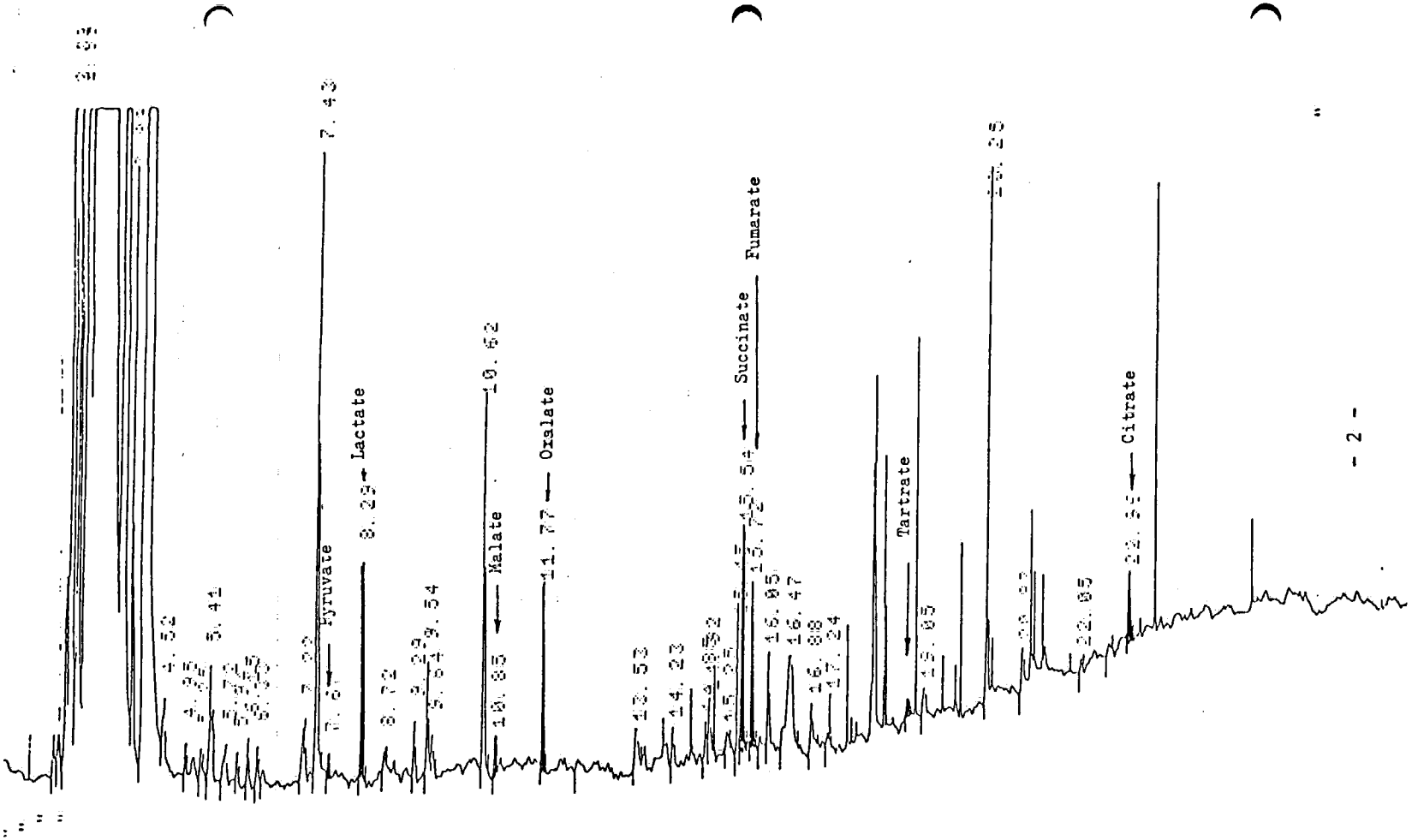

Fig. 1 GC^2 Separation of Ethyl Esters of Di- and Tri-Carboxylic Acids

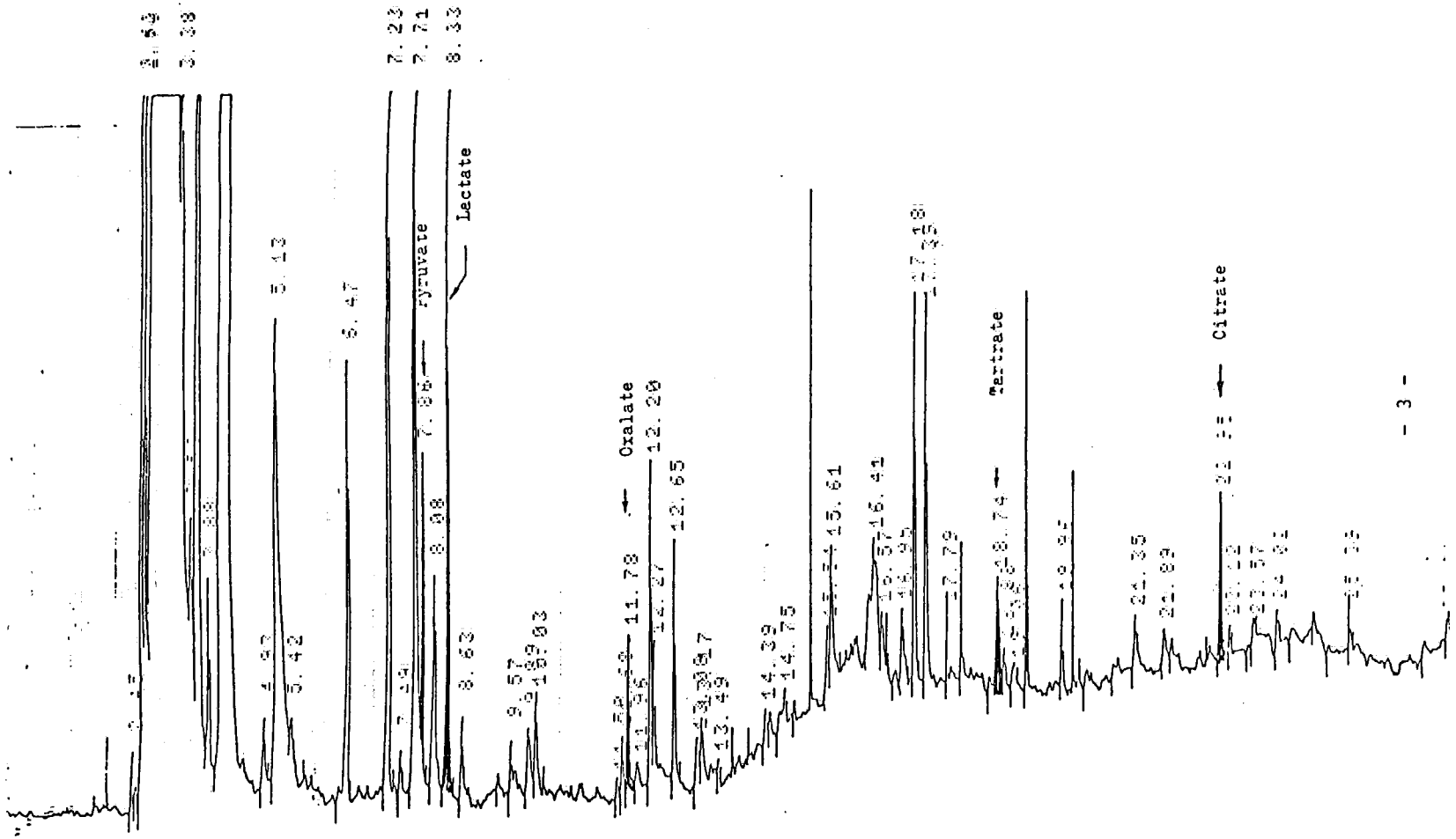

Fig. 2 GC^2 Separation of Ethyl Esters of Di- and Tri-Carboxylic Acids in Fermented Tobacco Extract (Blend Type : ØS-B-TOT ; 7 hrs. after inoculation time)